

根号をふくむ式の乗除③

名前

／8 問

◆次の計算をなさい。

(1) $3\sqrt{7} \times \sqrt{14}$

(2) $\sqrt{32} \times \sqrt{20}$

(3) $\sqrt{27} \times \sqrt{12}$

(4) $\sqrt{50} \times \sqrt{26}$

(5) $\sqrt{48} \div \sqrt{5}$

(6) $\sqrt{75} \div \sqrt{6}$

(7) $2\sqrt{5} \div \sqrt{18}$

(8) $3\sqrt{7} \div (-\sqrt{8})$

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$$\begin{aligned}
 (1) \quad 3\sqrt{7} \times \sqrt{14} &= 3\sqrt{7} \times \sqrt{2 \times 7} \\
 &= 3 \times \sqrt{2 \times 7^2} \\
 &= 3 \times 7 \times \sqrt{2} \\
 &= 21\sqrt{2}
 \end{aligned}$$

 $21\sqrt{2}$

$$\begin{aligned}
 (2) \quad \sqrt{32} \times \sqrt{20} &= 4\sqrt{2} \times 2\sqrt{5} \\
 &= 4 \times 2 \times \sqrt{2 \times 5} \\
 &= 8\sqrt{10}
 \end{aligned}$$

 $8\sqrt{10}$

$$\begin{aligned}
 (3) \quad \sqrt{27} \times \sqrt{12} &= 3\sqrt{3} \times 2\sqrt{3} \\
 &= 3 \times 2 \times \sqrt{3^2} \\
 &= 3 \times 2 \times 3 \\
 &= 18
 \end{aligned}$$

 18

$$\begin{aligned}
 (4) \quad \sqrt{50} \times \sqrt{26} &= 5\sqrt{2} \times \sqrt{2 \times 13} \\
 &= 5 \times \sqrt{2^2 \times 13} \\
 &= 5 \times 2 \times \sqrt{13} \\
 &= 10\sqrt{13}
 \end{aligned}$$

 $10\sqrt{13}$

$$\begin{aligned}
 (5) \quad \sqrt{48} \div \sqrt{5} &= \frac{\sqrt{48}}{\sqrt{5}} \\
 &= \frac{4\sqrt{3}}{\sqrt{5}} \\
 &= \frac{4\sqrt{3} \times \sqrt{5}}{\sqrt{5} \times \sqrt{5}} \\
 &= \frac{4\sqrt{15}}{5}
 \end{aligned}$$

 $\frac{4\sqrt{15}}{5}$

$$\begin{aligned}
 (6) \quad \sqrt{75} \div \sqrt{6} &= \frac{\sqrt{75}}{\sqrt{6}} \\
 &= \frac{5\sqrt{3}}{\sqrt{2} \times \sqrt{3}} \\
 &= \frac{5}{\sqrt{2}} \\
 &= \frac{5 \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}} \\
 &= \frac{5\sqrt{2}}{2}
 \end{aligned}$$

 $\frac{5\sqrt{2}}{2}$

$$\begin{aligned}
 (7) \quad 2\sqrt{5} \div \sqrt{18} &= \frac{2\sqrt{5}}{\sqrt{18}} \\
 &= \frac{2\sqrt{5}}{3\sqrt{2}} \\
 &= \frac{2\sqrt{5} \times \sqrt{2}}{3\sqrt{2} \times \sqrt{2}} \\
 &= \frac{\sqrt{10}}{3}
 \end{aligned}$$

 $\frac{\sqrt{10}}{3}$

$$\begin{aligned}
 (8) \quad 3\sqrt{7} \div (-\sqrt{8}) &= -\frac{3\sqrt{7}}{\sqrt{8}} \\
 &= -\frac{3\sqrt{7}}{2\sqrt{2}} \\
 &= -\frac{3\sqrt{7} \times \sqrt{2}}{2\sqrt{2} \times \sqrt{2}} \\
 &= -\frac{3\sqrt{14}}{4}
 \end{aligned}$$

 $-\frac{3\sqrt{14}}{4}$